Claims:

1. A cellular composition comprising one or more cells having a property characteristic of a neural stem cell and wherein said neural stem cell is capable of long term culture.

2. A cellular composition according to claim 1 wherein the neural stem cell has a property characteristic of a foetal neural stem cell.

3. A cellular composition according to claim 1 or 2 wherein the neural stem cell is characterised by an ability to grow indefinitely in tissue culture without undergoing transformation and to retain a degree of developmental plasticity.

4. A cellular composition according to any one of claims 1 to 3 wherein the neural stem cells are identified by markers found on neural stem cells including nestin and vimentin.

5. A method of preparing a cellular composition comprising one or more cells having a property characteristic of a neural stem cell wherein said neural stem cell is capable of long term culture, said method comprising:

obtaining a source of neural stem cells;

preparing a suspension of cells from the source;

contacting the suspension of cells with a suitable medium to maintain the neural stem cells in a cell culture; and

culturing the cells including passaging and propagation of the cells.

6. A method according to claim 5 wherein the source of the neural stem cell is a foetus differentiated at a stage after the embryonic stage.

7. A method according to claim 8 wherein the source of the neural stem cell is a head or spinal cord of the foetus.

8. A method according to any one of claims 5 to 7 wherein the suitable medium includes at least one lipid and at least one mitogenic factor.

9. A method according to claim 8 wherein the lipid is selected from the group including cholesterol, triglycerides or phospholipids or a combination thereof.

10. A method according to claim 8 or 9 wherein the mitogenic factor is selected from the group including bFGF, EGF, PDGF or a combination of EGF and bFGF.

11. A method according to claim 10 wherein the EGF is in the range of 2 to 20 ng/ml.

12. A method according to claim 11 wherein the bFGF is in the range of 2 to 20 µg/ml .

13. A method according to any one of claims 8 to 12 wherein a chemically defined lipid concentrate is present in a ratio of 1:100.

14. A method according to any one of claims 8 to 13 wherein the media further includes a cell survival factor.

15. A method according to claim 14 wherein the cell survival factor is selected from the group including transferrin, insulin, growth factors including EGF, bFGF (FGF-2) or PDGF, lipids and selenium.

16. A method according to any one of claims 5 to 15 wherein the passaging and propagation of the cells is conducted when the cells bud from the cell culture.

17. A cellular composition prepared by the method according to any one of claims 5 to 16.

18. A cellular composition according to claim 17 wherein the composition comprises a substantially homogeneous population of cells having a property characteristic of a neural stem cell.

19. An isolated neural stem cell prepared from a cellular composition according to any one of claims 1 to 4 , 17 or 18.

20. A genetically modified neural stem cell, prepared by introducing into or deleting or modifying a gene from a neural stem cell according to claim 19.

21. A method of preparing a genetically modified animal, said method comprising introducing a neural stem cell according to claim 19 or 20 into an oocyte or embryo and allowing the resulting embryo to mature to a foetus or animal.

22. A method of producing an animal, said method comprising introducing a continuously growing donor cell nucleus from a continuously growing donor cell into an oocyte or embryo and allowing the resulting embryo to mature and to preferably develop to a foetus or animal.

23. A method according to claim 22 wherein the donor cell is a continuously growing somatic cell.

24. A method according to claim 23 wherein the donor cell is a genetically modified somatic cell and wherein said genetic modification includes destroying, modifying or deleting a gene from the cell.

25. A method according to claim 22 wherein the donor cell is a neural stem cell according to claim 19 or 20.

26. A method according to claim 22 wherein the donor cell is a TERT cell.

27. A method according to claim 26 wherein the TERT cell is a genetically modified TERT cell and wherein said genetic modification includes destroying, modifying or deleting a gene.

28. An embryo produced by the method according to any one of claims 22 to 27.

29. A method of producing a cell line from an embryo to produce cloned cells of an embryo, said method comprising

obtaining an embryo according to claim 28;

culturing the embryo to an advanced cleavage stage embryo;

separating and cloning the cleaved cells of the embryo; and

optionally culturing the cloned cells.

30. A cell line prepared by the method according to claim 29.

31. An animal prepared by the method according to any one of claims 22 to 27.

32. An animal prepared from an embryo according to claim 28.

33. A cell culture medium suitable for culturing neural stem cells in a long term culture comprising at least one lipid and at least one mitogenic factor.

34. A medium according to claim 33 wherein the lipid is selected from the group including cholesterol, triglycerides or phospholipids or a combination thereof.

35. A medium according to claim 33 or 34 wherein the mitogenic factor is selected from the group including bFGF, EGF, PDGF or a combination of EGF and bFGF.

36. A medium according to claim 35 wherein the EGF is in the range of 2 to 20 ng/ml.

37. A medium according to claim 35 wherein the bFGF is in the range of 2 to 20 μg/ml .

38. A medium according to any one of claims 33 to 37 wherein a chemically defined lipid concentrate is present in a ratio of 1:100.

39. A medium according to any one of claims 33 to 38 wherein the media further includes a cell survival factor.

40. A medium according to claim 39 wherein the cell survival factor is selected from the group including transferrin, insulin, growth factors including EGF, bFGF (FGF-2) or PDGF, lipids and selenium.

41. A method of culturing neural stem cells said method comprising culturing the cells in the presence of at least one lipid and at least one mitogenic factor.

42. A method of culturing neural stem cells said method comprising culturing the cells in the presence of a culture medium according to any one of claims 33 to 40.

43. A method of treating a neurological disorder, said method comprising introducing a neural stem cell according to claim 19 into a host animal to correct the disorder wherein the neural stem cell is capable of replacing neural cells affected by the neurological disorder.

44. A method according to claim 43 wherein said neurological disorder is Parkinsons Disease.